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ABSTRACT

Systems analysis has the advantage for the study of communications relations of incorporating both the interactive relations and the broader context in which the relations occur. Applying this approach to the coorientation model led to the development of a set of transformations of the relations between individuals A and B and object X, from which the effects on accuracy, agreement and congruency could be determined. With a theory of communications relations thus specified, future work in this area should be governed by three priorities: (1) the determination of the nature of message/orientation elements that are to be mapped into each other, (2) the development of the set of transformations for mapping message elements into orientations, and (3) the conduct of field-experimental research to test the theory and determine those aspects which need modification. (Author/RH)

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TRANSFORMATIONS AND MESSAGE LINKAGES FOR A THEORY OF COMMUNICATION COORIENTATION

by

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Treating the coorientation model from the systems perspective, the first part of this paper develops a set of transformations which identifies possible system states, displays the logic, and specifies where, though not how, the coorientation model will undergo change as a function of change in basic orientations. The transformations may be used for either a static or single-time-frame dynamic description of coorientation. A worked example is provided. It is suggested that the benefit of these transformations is that they display how the model must behave and will keep researchers from studying those coorientation states excluded by the logic of the model as well as those relations that are true by definition.

The second part of the article is devoted to additional aspects of theory construction. Assumptions are made about the operation of the system, and changes in orientation are specified to be a direct function of message elements. The concepts of standardized usage and filter categories are introduced as a means for operationalizing the mapping of message elements into orientations.

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In a provocative article, philosopher Richard McKeon (1956) uses a set of compelling arguments to support the assertion that "the primary function of communication is to establish relations among men (p. 93)." Over the past decade, communication scientists have increasingly conducted research and improved their theoretical insights in the area of communication relations, in contrast to studying individual differences in communication behavior. The communication relations under scrutiny may involve fairly broad areas such as information-seeking or accuracy regarding communication relations; specific aspects of interpersonal interaction, such as interruptions or dominance; or questions of control through communication, such as complementarity ("one-up") vs. symmetry (equality).

Perhaps the major impetus to increased study of communication relations has come from a growing conviction that communication research at the individual difference or monadic level lacks real promise for further intellectual "payoff." After years of painstaking effort, individual difference research has explained some phenomena but left many others unexplained. Why? Because the larger context in which events occur has largely been ignored. As Watzlawick (et. al., 1967) say,

> If the limits of the inquiry are extended to include the effects of this behavior on others, their reactions to it, and the context in which all of this takes place, the focus shifts from the artificially isolated monad to the relationship between parts of a wider system. The observer of human behavior then turns from an inferential study of the mind to the study of the observable manifestations of relationship (p. 21).

Communication relations may be studied from two perspectives. The first approach is dyadic analysis, in which relations among two persons (rather than individual difference variables) are examined. Dyadic analysis focuses on the verbal and non-verbal aspects of the interaction among two individuals, and consequently it is only a partial answer to the need for an approach that incorporates both the interactive relations and the broader context. Our contention is that a second approach, systems analysis, meets these various needs--at both the theoretic and methodological levels--more fully than any other approach.

A system can be defined as a set of interrelated components with a boundary that possesses the property of regulating both the kind and rate of inputs to and outputs from the system. Given this very brief definition of a system, we can describe criteria that indicate the characteristics of an adequate theory of communication relations developed from within a systems perspective. The theory must include:

1. identification of a relational communication system which specifies...
    a. components for all levels of the system
    b. boundaries and their regulating functions, and
    c. the rules or laws of transformation that govern the relations among the components, thus explaining the changes in system states.
2. stipulation of the assumptions underlying the operation of the theory.
3. the linkages between message inputs and the operating system.

In this paper we will use these three criteria to develop a theory of relational communicaiton. The first criterion will be met in the first

half of the paper by incorporation of one model of communication relations, the "coorientation model," and by the development of the transformation rules that govern changes in the states of the model. We have selected the coorientation model for three reasons: (1) it is readily amenable to research and to incorporation into the systems perspective, (2) it deals with important communication problems (e.g., accuracy, agreement, and understanding), and (3) it has received considerable systematic attention from other researchers. In the second half of the paper, we will develop the concepts necessary to meet the second and third criteria for a theory of communication relations.

I. A Set of Transformations for the Coorientation System

An Overview of the Coorientation Model

As specified in numerous other papers (see for example, Chaffee & McLeod, 1968; Chaffee, McLeod, & Guerrero, 1969), the coorientation model requires at a minimum two persons, identified as A and B, and an "X" (object or person). Each person, A and B, is assumed to possess a basically undefined attribute--a set of "orientations" or "cognitions" about the "Xs" in the world that he has experienced and which define his social reality. The Xs may be defined along any conceptual dimension chosen by the experimenter, and may, of course, deal explicitly with communication relations.

For each person, four particular subsets of orientations may be used in the model; first are the orientations of A and B toward each other (AtoB, BtoA). Second are their orientations toward X (AtoX, BtoX). The third and fourth subsets are obtained by assuming that a person not only orients towards specified Xs, but that he also perceives the other person orienting toward the same Xs. Thus, we have the third orientation subset (AtoBreX, and BtoAreX) and the fourth subset (AtoBreA and BtoAreB). Since it is possible to define X as one of the persons in the dyad, it simplifies matters to consider only two orientations for each person: AtoX, AtoBreX and BtoX, BtoAreX. These basic orientations constitute two intrapersonal orientation systems, one for A, the other for B.

An interpersonal or relational coorientation system is constructed by juxtaposing the two intrapersonal systems, thus creating a new system

which uses the intrapersonal systems as subsystem components. The variables of this new system are obtained from the relations among the two basic types of orientations of the subsystems that we have just described.

It is customary to identify three variables in the coorientation model: congruency, agreement/understanding, and accuracy. Congruency is the relation between a person's orientation and his estimate of the other person's orientation. There are two measures of congruency for the system, one for each person. It is also customary to point out that congruency remains a subsystem or component variable rather than a system variable (i.e., it is an intrapersonal rather than interpersonal variable).

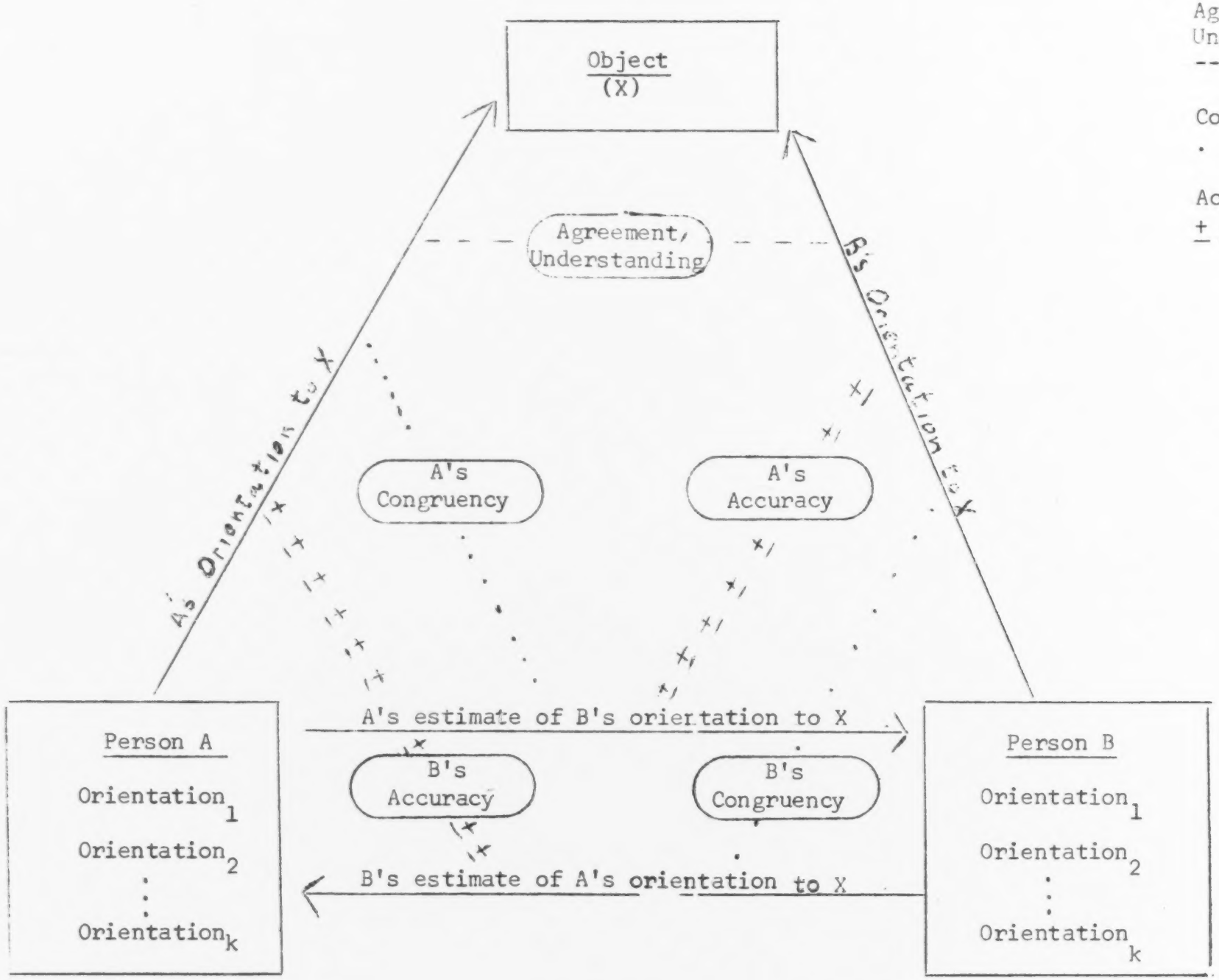
Agreement/understanding is the degree to which one person's orientation towards X is similar to the other person's orientation towards X. If the orientation is an evaluative one, the variable is typically called agreement; if non-evaluative, then it is called understanding. There is only one measure of agreement or understanding for the system.

Accuracy is the relation between a person's estimate of the other's orientation towards X and the other's actual orientation towards X. Again, there are two measures of accuracy for the system, one for each person. In Figure 1 the four basic orientations and A's & B's coorientations are schematically shown.

Chaffee (1971) provides a statement of the assumptions that underlie communication research with the coorientation model. Though his list is more explicit, it can be summarized under three areas. The first is that

Figure 1

The Coorientation Model



Orientations:

Coorientations:

Agreement/
Understanding

Congruency
. . . . .

Accurary
+ + + + +

A and B do in fact orient towards identical aspects of the same objects and persons; second, that these orientations are communicable; and third, that the orientations are capable of relational variation.

The Transformation System

In this section of the paper we shall describe the possible states which the coorientation model may assume. The development will be relative rather than absolute; we will identify those coorientation components which will or may change as a result of changes in values of the subsystem orientation components. This procedure is tantamount to displaying the internal logic of the system and as such it will also identify those system states which are impossible to achieve, given the constraints of the structure of this system.

Between the two subsystems of the model there are four basic orientations (AtoX, AtoBreX, BtoX and BtoAreX). Let us assume that for each orientation, one of two values is possible: the first value is a constant, as yet unspecified, which we shall represent by the symbol 0; the second value is any other number within the numerical limits of the system, which we shall symbolize by $\neq$.

Given that there are four orientations, each of which may assume two values, there are 16 possible changes in the "states of the system," i.e., $2^4 = 16$. These possible state alterations are listed in the top half of Table 1. For example, in Column 2, the value of AtoX has changed. In Column 6, BtoX and BtoAreX are constant, but AtoX and AtoBreX are changed--are either larger or smaller than the constant values (though the

Table 1

Table of Transformations for the Coorientation System

Differences or Changes in Orientations	"The 16 Possible System States"															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. AtoX	0	±	0	0	0	±	0	0	±	0	±	±	0	±	±	±
2. AtoBreX	0	0	±	0	0	±	±	0	0	±	0	±	±	0	±	±
3. BtoX	0	0	0	±	0	0	±	±	±	0	0	±	±	±	0	±
4. BtoAreX	0	0	0	0	±	0	0	±	0	±	±	0	±	±	±	±
Differences or Changes in Coorientation States	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A's Accuracy (2,3)*	0	0	Δ	Δ	0	Δ	?	Δ	Δ	Δ	0	?	?	Δ	Δ	?
B's Accuracy (1,4)	0	Δ	0	0	Δ	Δ	0	Δ	Δ	Δ	?	Δ	Δ	?	?	?
Agreement (1,3)	0	Δ	0	Δ	0	Δ	Δ	Δ	?	0	Δ	?	Δ	?	Δ	?
A's Congruency (1,2)	0	Δ	Δ	0	0	?	Δ	0	Δ	Δ	Δ	?	Δ	Δ	?	?
B's Congruency (3,4)	0	0	0	Δ	Δ	0	Δ	?	Δ	Δ	Δ	Δ	?	?	Δ	?

0 = no change
±, Δ = difference, change
? = uncertain

This table of transformations contains two parts: the four basic relational orientations are shown in the upper half and the five coorientations which are created by their juxtaposition are shown in the lower half. The table is designed to show how a change introduced to any combination of orientations will produce concomitant changes in the coorientation system. The 16 possible permutations of orientation change vs. no change, with the associated implications for change of the coorientation system, constitute the body of the table.

*The numbers in parenthesis indicate which subsystems must be juxtaposed to yield the relational measures.

magnitude of change is still unknown). Examination of the entire top half of Table 1 will show that the values of the permutations for the four orientations range from all constant (in Column 1) to all changed (Column 16).

The critical point to be demonstrated here is that each alteration of the basic orientations creates a different state of the coorientation system. These new states are presented in the lower half of Table 1. O again represents some arbitrary constant, and the symbol Δ represents an unspecified number that is different from the constant. A question mark (?) indicates that for a given permutation one cannot tell whether the constant (O) or some other value (Δ) will be adopted by the system.

It is important to note that each of the three coorientations may change in any of three ways. Since a coorientation is constructed from the values for two orientations, change may be accomplished by variations in either one of the original orientations or by variations in both. For example, the value for agreement can be changed by variation in (1) AtoX, (2) BtoX, or (3) AtoX and BtoX.

Which of the original orientations accounts for the change in a particular coorientation has important implications for change in the rest of the coorientation system. For example, if Agreement changes because AtoX changes, then B's Accuracy and A's Congruency also change. If Agreement changes because BtoX changes, then A's Accuracy and B's Congruency change. Finally, if Agreement changes because AtoX and BtoX change, then all other variables of the system will also change.

The indeterminacy (indicated by the question mark in Table 1) occurs because of the systemic interactive nature of the particular variables: the degree and direction of change of the basic orientations, coupled with their initial values may be such as to cancel each other out and produce no change in the coorientation relations.

The set of transformations can be used to obtain both a static and a dynamic description of the system. As a static description, if the 0's are viewed as constants which do not change and the $\pm$'s are variables that are free to assume any value within the limits of the system, other than the constant, then the lower part of the table may be read as a description of the relative states of the five coorientation variables, i.e., a 0 indicates where values are alike, a Δ where the values will be different, and a ? where the values are indeterminate with reference to the specific values involved.

As a dynamic description, the two symbols in the top part of the table, 0 and $\pm$, should be respectively interpreted as no change and change. The symbols in the bottom half of the table then should be interpreted as follows: 0 represents no change, Δ represents change, and the ? represents indeterminacy.

To recapitulate, the top part of Table 1 can be viewed as either a description of the state of the basic orientations prior to any change, or as a protocol for the introduction of change into the system. For the static description, the lower half of the table may be seen as a statement of the state of the coorientation system corresponding to any given state of the basic orientations; for the dynamic description, the

lower part of the table is a protocol for change in the coorientations as a function of change introduced into the basic orientations.

At this point a caveat should be made about the concept of time which is inherent in any dynamic system. The transformations which we have specified are not based upon time as a continuous, linear operator. The system, once set in operation, does not continue ad infinitum. Rather, as will be explained later, change occurs at discrete, discontinuous, non-equal interval increments.

It is interesting to note that the system of transformations presented in Table 1 displays the logic of the system. Given no constraints, the possible number of states of the coorientation system, given a dichotomous value for each of the five components, would be 32, i.e., $2^5 = 32$. Our table, however, shows only 16 possible states, and we argue that these 16 exhaust the possibilities. This can be taken to mean that the logic of the relations defining the coorientation components has excluded half of the possible coorientation state alternatives. For example, the logic of the system indicates that one cannot change agreement without also changing the value of at least one other component.

There are a number of advantages that are provided by the set of transformations we have just developed. First, it becomes clear that a number of coorientation states are ruled out of consideration by the logic of the coorientation system. For example, it is not possible to have a coorientation state with high accuracy and congruency but low agreement.

Second, the transformations should allow researchers to distinguish those changes in state which are true by definition from those which are

empirical findings. For example, McLeod (1971) states, "It is true that certain empirical regularities have begun to emerge--that a certain degree of congruency is required to improve accuracy and agreement, for example (p. 17)." If A's congruency changes, then by definition of the model A's accuracy and/or agreement must also change (unless offset by other changes in the system); the change mentioned by McLeod is true by definition, though the "to improve" (which we take to mean change a direction, i.e., increased accuracy) is an empirical finding. Finally, the set of transformations permits a truly systemic description of coorientation and is amenable to the development of a systemic theory of coorientation.

A WORKED EXAMPLE

To facilitate interpretation and understanding of the previous section, Table 2 presents artificial data for a worked example. The rows of the table of transformations in Figure 2 again contain the orientations and the coorientations. A second set of columns has been added, however, which allow parallel presentation of the same data, the left side showing the new values that the two levels of the system assume and the right side indicating the increments of change for each of the new values.

The T_0 . . . T_5 headings indicate five different time periods. The system begins at time zero T_0 with all of the values in the same state, equal to 5, which is equivalent to permutation 1 (we could have chosen any permutation as an initial state. See Table 1 for identification of permutation #1). As can be seen from the lower left half of the table, the coorientation values are all identical. It can also be seen in the right side of the table that no increments of change have been introduced.

At T_1, AtoX changes from 5 to 7; there is a concomitant change of two units in the three elements of the coorientation system: B's Accuracy and Agreement, and A's Congruency. At T_2 three changes occur in the orientations (permutation 5; again, see column 5, Table 1) and the coorientation system undergoes complete change. At T_3 complete change is again introduced into the basic orientations (equivalent to permutation 16) but the amount of change to all variables is a constant and hence the value of the coorientations system does not change--a not altogether obvious statement about the model and one which displays its systemic nature.

T_4 displays what can happen when the basic orientations are again all changed (permutation 16), but this time A and B's orientations are changed in equal amounts, though in opposite directions. Only B's accuracy and Agreement change; surprisingly, that change is in amounts greater than any of the amounts of change of the basic orientations.

Table 2

An Example of Changes in Coorientation States Through Five Time Frames

	New Values						Increments of Change					
	T_0	T_1	T_2	T_3	T_4	T_5	T_0	T_1	T_2	T_3	T_4	T_5
1 AtoX	5	7	9	6	8	8	0	2	2	-3	2	0
2 AtoBreX	5	5	3	0	2	2	0	0	-2	-3	2	0
3 BtoX	5	5	5	2	0	5	0	0	0	-3	-2	5
4 BtoAreX	5	5	4	1	-1	-1	0	0	-1	-3	-2	0
A's Accuracy (2,3)	0	0	2	2	2	3	0	0	2	0	0	5
B's Accuracy (1,4)	0	2	5	5	9	9	0	2	3	0	4	0
Agreement (1,3)	0	2	4	4	8	3	0	2	2	0	4	5
A's Congruency (1,2)	0	2	6	6	6	6	0	2	4	0	0	0
B's Congruency (3,4)	0	0	1	1	1	6	0	0	1	0	0	5

NOTE: This table of hypothetical values shows how the coorientation system will adopt new states as a function of change introduced to the basic orientations. Parallel development is provided in the left and right halves of the table indicating both new orientation/coorientation values and increments of change in both. The underlined numbers in the upper left quadrant of the table indicate new values for those orientations, and the rest of the table follows from these introduced changes.

II. Further Development of a Theory of Communication Relations

Thus far in our discussion we have described the coorientation model--it consists of a set of undefined orientations, the juxtaposition of which creates three coorientation variables: agreement, accuracy, and congruency. We then developed a set of transformations which determine change in the coorientation system as a function of change in the basic orientations.

These transformation rules constitute the operator of the system. Most theoretical systems in the social sciences postulate one of three operators to control their functioning: equilibrium principles, seeking behavior (often pleasure seeking), and avoidance (normally of pain). While these three rule sets may work well in explaining some behavior, we prefer to combine the transformations specified above with the assumption that the coorientation system will stay in its present state until activated upon by forces which induce change. We postulate no preferred state of the system. Thus, the coorientation system must be theoretically linked with other constructs before predictions about its behavior can be made.

Any theory must specify basic concepts and relations among those concepts (transformations). To develop a theory of coorientation, we must have at least two concepts, one of which is coorientation, and a set of transformations that relate change in other constructs to changes in orientation. The other concepts of the theory will be treated as either antecedent or consequent to coorientation, though eventually we will want to relate <u>both</u> antecedent and consequent elements to coorientation.

The general construct that is most useful and interesting to communication scholars is, of course, messages. We would like to develop

this part of the theory such that any and all changes in the coorientation state will be a direct function of various messages attributes input to that system. The messages may come from outside the system, or from one of the persons within the system. They may be received by one person, the other person, or both.

The problem which confronts us is how to conceptualize message attributes so that changes in these attributes will produce changes in orientation. One possibility is to consider messages and orientations to be constituted of the same elements. This strategy is useful because it allows us to look for a simplified set of transformations which allow mapping the elements in the message into conceptually similar elements in the orientations. Further, it seems to be a reasonable assumption if we view messages as observable sets of orientations.

Orientations were earlier described as an undefined category, which could be operationalized as opinions, attitudes, beliefs, information states, etc. Now, if messages are constructed from elements that are similar to orientations, then we should view messages as <u>containing</u> attitude, opinion, belief, and/or informational elements.

What are these basic elements? While we cannot provide a definitive answer, we offer the following analysis as one fruitful alternative to pursue. A person's categorization of an object or orientation towards it is based on his total experience with it, only part of which consists of messages. We can know a person's orientation toward an object in only two ways: (1) by observing his behavior and inferring an orientation, or (2) by asking him.

To ask a person his orientation is to request his classification system and how he relates this object to other objects--which is what the object "means" to him. The only way that he can convey his classification system is by statements. Thus, an orientation toward an object may be defined as a statement, assertion, or proposition that a person makes about an object which serves to (1) classify the object, usually by giving its attributes, and/or (2) relate (compare and contrast) the object to other objects. It should be quite obvious that the definition that we have just developed is quite applicable to messages as well as orientations, for one way to define messages is as a collection of statements which categorize and relate objects. Thus, we have a definition of messages and orientations that are constituted out of the same basic statement elements.

The set of transformations which specify how a person's statements regarding an object will change as a function of the messages he receives is no easy task. If we assume that a person's present orientation is some combination of all previous messages (and other informational experiences), then the next state should also operate under this combinatorial principle. One combinatorial principle suggested by Woelfel (1971) is the aggregate, that is, the effect of a message is the arithmetic mean of the person's present orientation and the value assigned to the new message. Obviously, other principles could by specified, each one with its own implications for the mapping of message statements into orientation statements.

It should be clear that we need some method for analyzing statements that occur in messages and statements that people make regarding their

own orientations, plus, of course, the rules that combine these two. Let us suggest two techniques whereby statements may be analyzed.

To define the common response that will be given to a particular message, we shall use the concept of "standardized usages." Cappella (1971) states that "...for symbols and their combinations there exists a set of appropriate, conventional and normative symbol-referent associations and symbol combinations which are cued by the situation within which the communication takes place. We shall term these sets of appropriate choices among alternatives as standardized usages (p. 7)."

Standardized usage can be viewed as a logically consistent set of content, procedural, and translative rules, where rule is defined as a specification of the response to a message which is expected in a given situation.

Thus, standardized usage refers to those recurring patterns of message interpretations that are common to some group of people. This concept will provide us with an estimate of the interpretation that will be given to statements in a given message by people who are within that standardized usage. We will view this as the standard interpretation, the orientation relevant elements of this message.

To assess the statements a person makes regarding his orientations towards an object, we shall employ the concept of "filter categories." Woelfel (1970) states:

> Through interaction with the organized social context, the individual learns to recognize the unity of a set of stimuli, past and present. But something cannot just be "similar" or "different"; it must be similar to something and different

> from something. Thus the process of defining an object is one of association and differentiation, or categorization. Once formed, these categories establish the basis for the definition of objects the individual confronts. These filter categories are conceptual linkages of stimuli or objects in some sense held to be equivalent. A person defines an object by placing it into a filter category which serves to unite it in some sense with some other objects and differentiate it from others. (p. 7, 8)

It is our contention that if we can determine the standardized patterns of response to incoming messages, and if we can determine an individual's criteria for inclusion or exclusion of message elements into his categorization scheme, then we have the necessary conditions for determining changes in orientation that will occur within the relational system. All that remains is the determination of the transformations.

An incoming message will be processed by the filter categories in such a way that, (1) they are subsumed under already existing categories, (2) new categories are created, (3) old categories are refined, and hence divided, (4) previous categories are combined to create new superordinate categories.

To determine a person's filter categories, Woelfel has developed the "filter category elicitor," which asks a person to indicate how he classifies an object. The same technique can be used to determine how he relates objects to one another.

Summary and Conclusions

In this paper we have explored the possibilities of a theory of communication relations. To accomplish this task we treated the coorientation model from a systems perspective, developing a set of transformations which specify changes in coorientation as a function of changes in basic orientations. Assumptions were made about the operation of the system and changes were specified to be a direct function of message elements. The concepts of standardized usage and filter categories were introduced as a means for operationalizing and mapping of message elements into orientation elements.

The formulation of a theory of communication relations is merely a beginning point; the hard work remains in the future. For those intrigued by the possibilities outlined here, we would urge that efforts in this area be governed by three priorities: (1) the determination of the nature of message/orientation elements that are to be mapped into each other, (2) the development of the set of transformations for mapping message elements into orientations, and (3) the conduct of field-experimental research to test the theory and determine those aspects which need modification.

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